

further response having been extended one month from January 7, 2003 to February 7, 2003 by the accompanying Petition for Extension of Time with fee, please amend the above-identified application as follows.

IN THE CLAIMS:

Please cancel Claims 17 to 22, 27, 29, 31 and 33 without prejudice or disclaimer of subject matter.

Please amend Claims 23 and 40 to read in independent form, and amend the remaining claims to read as follows. Note that all claims currently pending in this application including those presently being amended, have been reproduced below for the Examiner's convenience. A marked-up copy showing the changes made to the claims is attached as an appendix.

1. (Three Times Amended) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group consisting of N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%.

2. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu $K\alpha$ radiation source, having a half width of more than 0.2° .

3. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu $K\alpha$ radiation source, having a half width of more than 0.5° .

4. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 25^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu $K\alpha$ radiation source, having a half width of more than 1.0° .

5. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of $2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu $K\alpha$ radiation source, having a half width of more than 0.5° .

6. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy has a peak in a range of

$2\theta = 40^\circ$ to 50° in X-ray diffraction pattern obtained using a Cu K α radiation source, having a half width of more than 1.0° .

7. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 500Å.

8. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 200Å.

9. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a crystallite size calculated from X-ray diffraction analysis, which is less than 100 Å.

10. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 μm to 20 μm .

11. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has an average particle size in a range of from 0.5 μ m to 10 μ m.

12. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said transition metal element comprises at least one kind of an element selected from a group consisting of Cr, Mn, Fe, Co, Ni, Cu, Mo, Tc, Ru, Rh, Pd, Ag, Ir, Pt, Au, Ti, V, Y, Sc, Zr, Nb, Hf, Ta, and W.

13. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an amount of more than 30% by weight.

14. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy contains a binder comprising a polymer which is either water-soluble or water-insoluble.

15. (Unamended From Previous Version) An electrode material for an anode according to claim 14, wherein said particulate comprising said amorphous Sn•A•X alloy contains said alloy in an amount in a range of from 80 % by weight to 100 % by weight.

16. (Unamended From Previous Version) An electrode material for an anode according to claim 14, wherein the amount of said binder contained is in a range of from 1 % by weight to 10 % by weight.

Claims 17 to 22. (Cancelled).

23. (Amended) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy with a substantially non-stoichiometric ratio composition, wherein in said formula $\text{Sn} \cdot \text{A} \cdot \text{X}$, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group consisting of O, F, N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy is $\text{Sn}/(\text{Sn} + \text{A} + \text{X}) = 20$ to 80 atomic%, and wherein said particulate comprising said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy contains carbon element.

24. (Twice Amended) An electrode material for an anode according to claim 1, wherein said amorphous $\text{Sn} \cdot \text{A} \cdot \text{X}$ alloy contains at least one kind of an element selected from a group (a) consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr; a group (b) consisting of rare earth elements in X; and a group (c) consisting of metalloide elements in X, wherein said group (b) consisting of rare earth elements consists of La, Ce,

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Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu, and said group (c) consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te.

25. (Unamended From Previous Version) An electrode material for an anode according to claim 24, wherein said amorphous Sn•A•X alloy contains two kinds of elements selected from said group (a), said group (b), and said group (c).

26. (Unamended From Previous Version) An electrode material for an anode according to claim 24, wherein said amorphous Sn•A•X alloy contains three kinds of elements selected from said group (a), said group (b), and said group (c).

27. (Cancelled).

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28. (Twice Amended) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy contains one kind of an element selected from a group consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr and one kind of an element selected from a group consisting of rare earth elements in X, wherein said group consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu.

29. (Cancelled).

30. (Twice Amended) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy contains one kind of an element selected from a group consisting of Pb, Bi, Al, Ga, In, Tl, Zn, Be, Mg, Ca, and Sr and one kind of an element selected a group consisting of metalloide elements in X, wherein said group consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te.

31. (Cancelled).

32. (Twice Amended) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy contains at least one kind of an element selected from a group consisting of metalloide elements in X and one kind of an element selected a group consisting of rare earth elements in X, wherein said group consisting of rare earth elements consists of La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Lu, and said group consisting of metalloide elements consists of B, C, Si, P, Ge, As, Se, Sb, and Te.

33. (Cancelled).

34. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy contains one kind of an element selected from a group consisting of Si, Ge, Al, Zn, Ca, La, and Mg, and one kind of an element selected from a group consisting of Co, Ni, Fe, Cr, and Cu.

35. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy contains one kind of an element selected from a group consisting of Si, Ge, Al, Zn, Ca, La, and Mg, one kind of an element selected from a group consisting of Co, Ni, Fe, Cr, and Cu, and one kind of an element selected from a group consisting of C, B, and P.

37. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a specific surface area of more than 1 m²/g.

38. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said particulate comprising said amorphous Sn•A•X alloy has a specific surface area of more than 5 m²/g.

39. (Unamended From Previous Version) An electrode material for an anode according to claim 1, wherein said amorphous Sn•A•X alloy contains Li element in a range of from 2 atomic % to 30 atomic %.

40. (Amended) An electrode material for an anode of a rechargeable lithium battery, containing a particulate comprising an amorphous Sn•A•X alloy with a substantially non-stoichiometric ratio composition, wherein said formula Sn•A•X, A indicates at least one kind of an element selected from the group consisting of transition metal elements, X indicates at least one kind of an element selected from the group

consisting of O, F, N, Mg, Ba, Sr, Ca, La, Ce, Si, Ge, C, P, B, Pb, Bi, Sb, Al, Ga, In, Tl, Zn, Be, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, As, Se, Te, Li and S, where the element X is optionally present and the content of the constituent element Sn of the amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy is $\text{Sn}/(\text{Sn}+\text{A}+\text{X}) = 20$ to 80 atomic %, and wherein said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy contains at least one kind of an element selected from a group consisting of N and S in an amount in a range of from 1 atomic % to 30 atomic %.

41. (Unamended From Previous Version) An electrode structural body comprising said electrode material for an anode, containing said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy defined in claim 1 and a collector comprising a material incapable of being alloyed with lithium in electrochemical reaction.

43. (Unamended From Previous Version) An electrode structural body according to claim 41, wherein the amount of said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy in said electrode structural body is at least 25 % by weight.

44. (Unamended From Previous Version) An electrode structural body according to claim 41, wherein said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy in said electrode structural body contains at least 30 % by weight of said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy.

45. (Unamended From Previous Version) An electrode structural body according to claim 41, wherein said electrode structural body has an electrode material layer comprising said electrode material for an anode and a binder on said collector.

46. (Unamended From Previous Version) An electrode structural body according to claim 45, wherein said binder comprises a polymer which is either water-soluble or water-insoluble.

47. (Amended) A rechargeable lithium battery having an anode, an electrolyte, and a cathode and in which oxidation-reduction reaction of lithium is used, characterized in that said anode comprises said electrode structural body defined in any of claims 41 and 43 to 46.

48. (Unamended From Previous Version) A rechargeable lithium battery according to claim 47, wherein said cathode comprises a lithium element-containing material having a function of deintercalating lithium ion and intercalating said lithium ion in charge-and-discharge reaction.

49. (Unamended From Previous Version) A rechargeable lithium battery according to claim 47, wherein said lithium element-containing material as the constituent material of said cathode contains an amorphous phase.

50. (Unamended From Previous Version) A rechargeable lithium battery according to claim 47, wherein said lithium element-containing material as the constituent material of said cathode contains a metal oxide material containing amorphous phase.

51. (Unamended From Previous Version) A process for producing an electrode structural body for a rechargeable lithium battery, said process is characterized by having a step of arranging said electrode material for an anode containing said particulate comprising said amorphous $\text{Sn} \bullet \text{A} \bullet \text{X}$ alloy defined in claim 1 on a collector.

52. (Unamended From Previous Version) A process for producing an electrode structural body for a rechargeable lithium battery according to claim 51, wherein said step includes a step of arranging said particulate comprising said amorphous $\text{Sn} \bullet \text{A} \bullet \text{X}$ alloy on said collector by way of press forming.

53. (Unamended From Previous Version) A process for producing an electrode structural body for a rechargeable lithium battery according to claim 51, wherein said step includes a step of preparing a paste material by mixing said particulate comprising said amorphous $\text{Sn} \bullet \text{A} \bullet \text{X}$ alloy with a binder and arranging said paste material on said collector.

54. (Unamended From Previous Version) A process for producing an electrode structural body for a rechargeable lithium battery according to claim 53, wherein a binder comprising a water-soluble polymer material is used as said binder.

55. (Unamended From Previous Version) A process for producing a rechargeable lithium battery having an anode, an electrolyte, and a cathode and in which oxidation-reduction reaction of lithium is used, said process is characterized by having a step of forming said anode by arranging said electrode material for an anode containing said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy defined in claim 1 on a collector.

56. (Unamended From Previous Version) A process for producing a rechargeable lithium battery according to claim 55, wherein said step of forming said anode includes a step of arranging said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy on said collector by way of press forming.

57. (Unamended From Previous Version) A process for producing a rechargeable lithium battery according to claim 55, wherein said step of forming said anode includes a step of preparing a paste material by mixing said particulate comprising said amorphous $\text{Sn}\cdot\text{A}\cdot\text{X}$ alloy with a binder and arranging said paste material on said collector.

58. (Unamended From Previous Version) A process for producing a rechargeable lithium battery according to claim 57, wherein a binder comprising a water-soluble polymer material is used as said binder.